

Claims

1. A spark plug coil and pressure sensor assembly for providing a spark to a cylinder of an internal combustion engine, said assembly comprising:
  - a spark plug configured for mounting in said cylinder;
  - a pressure sensor associated with said plug configured to detect
  - 5 a pressure in said cylinder and generate a pressure signal in response thereto;
  - a first electrically conductive ring connector configured to receive said pressure signal; and
  - a housing having a main axis and having at least one electrically conductive leaf spring member wherein said leaf spring member is
  - 10 configured to resiliently engage said first ring connector over a first predetermined angle relative to said main axis, said leaf spring member being further configured for conduction of at least said pressure signal to an interface.
2. The assembly of claim 1 further comprising a second ring connector for conduction of a power signal
3. The assembly of claim 2 wherein said second ring connector is axially offset from said first ring connector.
4. The assembly of claim 2 wherein said leaf spring member is a first leaf spring member, said housing further including a second electrically conductive leaf spring member configured to resiliently engage said second ring connector over a second predetermined angle relative to said main axis, said second
- 5 leaf spring member further configured for conduction of at least said power signal to said interface.
5. The assembly of claim 4 wherein said first leaf spring member is disposed at a first angular position and said second leaf spring member is disposed at a second angular position different from said first angular position to thereby reduce interference between first and second leaf spring members.
6. The assembly of claim 1 further comprising an electrically insulating boot secured to said housing.

7. The assembly of claim 1 wherein said electrically conductive leaf spring member comprises a resilient leg extending along said main axis of said housing and a portion of said leg is insert molded therein.

8. The assembly of claim 1 further comprising an annular seal secured by said housing for sealing an inner portion thereof.

9. The assembly of claim 2 further including electronics intermediate said pressure sensor and said first ring connector, said electronics being covered with an encapsulant.

10. The assembly of claim 10 further including leads configured to couple said pressure sensor to said electronics, said leads being covered by said encapsulant.

11. A spark plug coil and pressure sensor assembly for providing a spark to a cylinder of an internal combustion engine, said assembly comprising:

a spark plug configured for mounting in said cylinder;

5 a pressure sensor associated with said plug configured to detect a pressure in said cylinder and generate a pressure signal;

a first electrically conductive ring connector coupled to receive said pressure signal;

a second electrically conductive ring connector axially offset relative to said first ring connector and coupled to receive a power signal;

10 an electronics circuit electrically intermediate said pressure sensor and said first and second ring connectors, leads configured to couple said pressure sensor to said electronics circuit, said electronics circuit and said leads being covered by encapsulant; and

15 a housing having a main axis and having a first electrically conductive leaf spring member circumferentially offset from a second electrically conductive leaf spring member wherein said first and said second electrically conductive leaf spring members are configured to resiliently engage said first and said second ring connectors, respectively, over a predetermined angle relative to said main axis, said first electrically conductive leaf spring member being further configured for  
20 conduction of at least said pressure signal from said sensor to an interface.

12. The assembly of claim 11 wherein said first leaf spring member is disposed at a first angular position and said second leaf spring member is disposed at a second angular position different from said first angular position to thereby reduce interference between first and second leaf spring members.

13. The assembly of claim 11 wherein said second electrically conductive leaf spring member is further configured for conduction of at least said power signal from said interface to said sensor.

14. The assembly of claim 11 further comprising an electrically insulating boot secured to said housing.

15. The assembly of claim 11 wherein each of said first and said second electrically conductive leaf spring members comprise a respective resilient leg extending along said main axis of said coil housing and a portion of said leg is insert molded therein.

16. The assembly of claim 11 wherein said spark plug pressure assembly comprises an annular seal secured by said coil case for sealing an inner portion of said housing.

17. A glow plug and pressure sensor assembly for an internal combustion engine comprising:

a glow plug for mounting in said cylinder;

5 a pressure sensor associated with said plug configured to detect a pressure in said cylinder and generate a pressure signal in response thereto;

a first electrically conductive ring connector configured to receive said pressure signal;

10 an electronics circuit electrically intermediate said pressure sensor and said first ring connector, at least one lead configured to couple said pressure sensor to said electronics circuit, said electronics circuit and said at least one lead being covered by an encapsulant; and

15 a housing having a main axis and having at least one electrically conductive leaf spring member wherein said leaf spring member is configured to resiliently engage said first ring connector over a first predetermined angle relative to said main axis, said leaf spring member being further configured for conduction of at least said pressure signal to an interface.

18. The assembly of claim 17 further comprising a second ring connector for conduction of a power signal.

19. The assembly of claim 18 wherein said second ring connector is axially offset from said first ring connector.

20. The assembly of claim 18 wherein said leaf spring member is a first leaf spring member, said housing further including a second electrically conductive leaf spring member configured to resiliently engage said second ring connector over a second predetermined angle relative to said main axis, said second  
5 leaf spring member further configured for conduction of at least said power signal to said interface.

21. The assembly of claim 20 wherein said first leaf spring member is disposed at a first angular position and said second leaf spring member is disposed at a second angular position different from said first angular position to thereby reduce interference between first and second leaf spring members.

22. The assembly of claim 17 further comprising an electrically insulating boot secured to said housing.

23. The assembly of claim 17 wherein said electrically conductive leaf spring member comprises a resilient leg extending along said main axis of said coil housing and a portion of said leg is insert molded therein.

24. The assembly of claim 17 further comprising an annular seal secured by said coil case for sealing an inner portion of said housing.